

WHAT IS CLAIMED IS:  
~~WE CLAIM~~

1. A brake assembly for a motor, the brake assembly comprising a stack of brake elements, at least one of which is rotatable with an output shaft of the motor, in use, and at least one of which is non-rotatable relative to a housing, and an actuator arrangement for controlling the magnitude of a compressive load applied to the brake elements, wherein the brake elements are provided, at least in part, with a surface coating which raises the coefficient of friction of the brake elements to a value greater than 0.2.
2. The brake assembly as claimed in Claim 1, wherein the surface coating raises the coefficient of friction to a value of at least 0.5.
3. The brake assembly as claimed in Claim 2, wherein the coefficient of friction falls within the range 0.5 to 0.6.
4. The brake assembly as claimed in Claim 1, wherein the surface coating is tungsten carbide forming a layer of thickness falling within the range 0.64 mm to 1.27 mm.
5. The brake assembly as claimed in Claim 1, wherein the stack of brake elements takes the form of a first brake element which is rotatable with the output shaft of the motor, in use, and a second brake element which is non-rotatable relative to the housing.
6. The brake assembly as claimed in Claim 5, wherein the second brake element forms part of a cap forming part of the housing.

7. The brake assembly as claimed in Claim 5, further comprising an arrangement for preventing contact between the first and second brake elements when the actuator arrangement is actuated.

8. The brake assembly as claimed in Claim 7, wherein the arrangement for preventing contact between the first and second brake elements includes a secondary spring for biasing the first brake element away from the second brake element, the secondary spring providing a biasing force which exceeds the weight of the first brake element.

9. The brake assembly as claimed in Claim 8, wherein the actuator arrangement comprises an electromagnetic actuator arranged to act against a primary spring, the spring force due to the secondary spring being sufficient to overcome the weight of the first brake element but being less than the spring force due to the primary spring.

10. The brake assembly as claimed in Claim 9, wherein the arrangement for preventing contact between the first and second brake elements further comprises a stop member arranged to limit axial movement of the first brake element relative to an armature forming part of the actuator means.

11. The brake assembly as claimed in Claim 10, wherein the stop member takes the form of a shoulder provided on a rotor shaft which is rotatable with the output shaft of the motor.

12. The brake assembly as claimed in Claim 11, wherein the rotor shaft is provided with an abutment member, the secondary spring being located between the abutment member and the first brake element.

13. The brake assembly as claimed in Claim 1, wherein at least one of the brake elements takes the form of a brake disc.<sup>15</sup>

14. The brake assembly as claimed in Claim 1, wherein the actuator arrangement comprises an electromagnetic actuator arranged to act against a primary spring.<sup>20</sup><sup>23</sup>

15. The brake assembly as claimed in Claim 14, wherein the electromagnetic actuator includes a winding located such that the brake elements are accessible without requiring removal of the winding from the motor.<sup>20</sup><sup>21</sup><sup>15</sup>

16. A brake assembly for a motor, the brake assembly comprising a plurality of brake elements and an electromagnetic actuator arranged to permit control of a compressive load applied to the brake elements, wherein the actuator includes a winding located such that the brake elements are accessible without requiring removal of the winding from the motor.<sup>14</sup><sup>15</sup><sup>20</sup><sup>21</sup><sup>15</sup>

17. The brake assembly as claimed in Claim 16, wherein the winding is located between the brake elements and the motor.<sup>21</sup><sup>15</sup>

18. The brake assembly as claimed in Claim 16, wherein the brake elements form part of a module which can be removed from the motor and the remainder of the brake assembly as a unit.<sup>15</sup><sup>14</sup>

19. The brake assembly as claimed in Claim 18, wherein the module further includes an armature forming part of the actuator.<sup>22</sup><sup>20</sup>